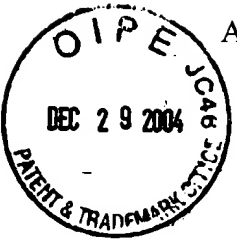


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Atty Docket No. 080398.P386

Patent

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:	) Examiner:	An, Shawn S.
	)	
James J. Carrig	) Art Unit:	2613
	)	
Application No. 09/724,740	)	
	)	
Filed: November 28, 2000	)	
	)	
For: ROBUST TIME DOMAIN	)	
BLOCK DECODING	)	
	)	

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPEAL BRIEF UNDER 37 C.F.R. § 41.37**

This is an appeal to the Board of Patent Appeals and Interferences from the decision of the Examiner of Group 2613, mailed July 12, 2004, in which claims 1-15 in the above-identified application were finally rejected. This Appeal Brief is submitted pursuant to 37 C.F.R. § 41.37(a).

**I. REAL PARTY IN INTEREST**

The real parties in interest are the assignees of the full interest in the invention:  
Sony Corporation, 7-35 Kitashinagawa, 6-Chome Shinagawa-ku, Tokyo, Japan, and Sony Electronics, Inc., 1 Sony Drive, Park Ridge, New Jersey, 07656.

## **II. RELATED APPEALS AND INTERFERENCES**

To the best of Appellant's knowledge, there are no appeals or interferences related to the present appeal that will directly affect, be directly affected by, or have a bearing on the Board's decision in the instant appeal.

## **III. STATUS OF THE CLAIMS**

Claims 1-15 are pending in the application and were rejected in a final Office Action mailed July 12, 2004. Claims 1-15 are the subject of this appeal. Claims 1-15 as they stand on appeal are set forth in Appendix A.

## **IV. STATUS OF AMENDMENTS**

No amendments to the claims have been made after receipt of the Final Office Action.

## **V. SUMMARY OF CLAIMED SUBJECT MATTER**

Appellant's invention as claimed in claims 1-15 uses values of correctly decoded pixels in encoded image data to predict the values for pixels corresponding to lost or damaged transform coefficients. When some of the transform coefficients in encoded image data are erroneous, the decoding of image data results in only a portion of the pixels being decoded correctly (page 12, lines 1-7). Appellant refers to the correctly decoded pixels as a partial decoding  $\hat{x}$  (page 8, line 10 through page 9, line 6). The erroneous coefficients are identified and values for the erroneous coefficients are estimated. The estimated coefficients are decoded into estimated pixel values (page 12, lines 8-14). Appellant refers to the estimated pixel values as an estimated or predicted decoding  $E(x)$  (page 8, line 10 through page 11, line 2). Thus, the block when initially decoded contains both partial (correct) and predicted (estimated) decodings. The partial decoding  $\hat{x}$  and the predicted decoding  $E(x)$  are subsequently used to update the estimated values for the erroneous coefficients (page 12, lines 15-19; *see* equation 19). Claims 6-10 are means-plus-function claims under 35 U.S.C. §112 ¶6. The structure corresponding to the recited means may be found in Figures 3-6 and on page 12, line 1 through page 15, line 25.

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

- I. Claims 1-4 and 6-9 as rejected under 35 U.S.C. § 102(b) over U.S. Patent 5,937,101 to Jeon et al.
- II. Claims 5 and 10 as rejected under 35 U.S.C. § 103(a) over Jeon.
- III. Claims 11-15 as rejected under 35 U.S.C. § 103(a) over Jeon in view of U.S. Patent 6,373,894 to Florencio et al.

## **VII. ARGUMENTS**

- I. Claims 1-4 and 6-9 are Patentable under 35 U.S.C. § 102(b) over Jeon.

Claims 1-4 and 6-9 stand or fall together. Claim 1 is the representative claim.

Jeon discloses a post-processing of discrete cosine transform (DCT) coefficients that adds adjustment values to every coefficient to recover the information lost when the data represented by the coefficients was quantized. Thus, Jeon considers every quantized coefficient erroneous because of the lossy nature of quantization, and accordingly Jeon updates every coefficient with an adjustment value. The updated coefficients are then applied to the inverse of the transform to recover the image. In contrast, Appellant's claim 1 recites both erroneous and non-erroneous coefficients.

Appellant respectfully believes that the Examiner continues to misinterpret claim 1. The Examiner asserts that Jeon discloses both Appellant's claimed predicted decoding and partial decoding. Jeon considers all coefficients in a block as erroneous, however, and thus does not disclose Appellant's partial decoding that is created from non-erroneous coefficients in a block. Consequently, Jeon cannot be properly interpreted as teaching or suggesting Appellant's further claim limitation that updated values for the erroneous coefficients are based on both the predicted and partial decodings.

Further, in the final Office Action mailed July 12, 2004, the Examiner stated that Appellant's claim term "partial decodings" is misleading because all of the coefficients of the block are decoded. Appellant respectfully submits that claim terms defined in the Specification cannot be properly objected to as misleading because the Applicant is allowed to be his own lexicographer. During prosecution Appellant twice cited sections of the Specification to the Examiner that defined the terms "partial decoding" and

"predicted decoding" (Responses dated July 17, 2003 and April 23, 2004). Furthermore, Appellant amended claim 1 to clarify the meanings of the terms:

decoding the *erroneous coefficients* of the block into *estimated pixel values* using the initial values of the coefficients to create *predicted decodings* of the block where there are errors in the coefficients, and decoding *non-erroneous coefficients* of the block into *error-free pixel values* using received values of the coefficients to create *partial decodings* of the block where there are no errors in the coefficients (emphasis added).

Thus, in stating that the term is misleading, the Examiner is not only disregarding the definition of "partial decoding" as set forth in the Specification, but is also ignoring the definition of the term that appears within claim 1 itself. This is improper.

Accordingly, Appellant respectfully submits that the invention claimed in claims 1-4 and 6-9 is not anticipated by Jeon.

II. Claims 5 and 10 are Patentable under 35 U.S.C. § 103(a) over Jeon.

Claims 5 and 10 stand or fall together. Claim 5 is the representative claim and depends from claim 1. Because Jeon does not teach each and every limitation of claim 1, the § 103 rejection can only be proper if the facts asserted in the Examiner's Official Notice disclose the claimed elements that are missing in Jeon. As discussed above, Jeon does not disclose or suggest the use of both erroneous and non-erroneous coefficients. But the Examiner only asserts Official Notice that is well-known to display decoded pixel values. Therefore, the combination of Jeon and the facts asserted in the Examiner's Official Notice does not teach or suggest each and every limitation of Appellant's invention as claimed in claim 5.

Accordingly, Appellant respectfully submits that the invention claimed in claims 5 and 10 is not rendered obvious by Jeon.

III. Claims 11-15 are Patentable under 35 U.S.C. § 103(a) over the combination of Jeon and Florencio.

A. Claims 11-14

Claims 11-14 stand or fall together. Claim 11 is the representative claim. Claim 11 claims the subject matter of claim 1, as embodied on a computer readable medium.

The Examiner is relying on Jeon as disclosing the claimed elements and on Florencio as teaching that instructions for a decoder can be embodied on a computer readable medium.

As discussed above, Jeon does not disclose Appellant's claimed partial decoding and its use as claimed in claim 1 and also claimed in claim 11. Florencio discloses estimation transform coefficients from pre-determined classes of signals but does not teach or suggest partial decodings or the use of partial decodings as claimed. Therefore, the combination of Jeon and Florencio cannot be properly interpreted as disclosing each and every limitation of claim 11.

Accordingly, Appellant respectfully submits that the invention claimed in claims 11-14 is not obvious over the combination of Jeon and Florencio.

#### **B. Claim 15**

Claim 15 depends from claim 11 and claims the subject matter of claim 5 as embodied on a computer readable medium. As in the rejection of claim 5, the Examiner is relying on facts asserted by Official Notice similar to that taken in his rejection of claims 5 and 10. As discussed above with regard to claims 5 and 11, however, neither Jeon, Florencio, nor the asserted Official Notice teach or suggest Appellant's claimed partial decoding or its use.

Accordingly, Appellant respectfully submits that the invention claimed in claim 15 is not obvious over the combination of Jeon and Florencio.

### **VIII. CONCLUSION**

The invention of claims 1-10 is not anticipated by Jeon, and that of claims 11-15 is not rendered obvious by the combination of Jeon and Florencio. Thus, Appellant respectfully requests the Board reverse the rejections under 35 U.S.C. § 102 of claims 1-4 and 6-10, reverse the rejections under 35 U.S.C. § 103 of claims 5 and 10-15, and direct the Examiner to enter a Notice of Allowance for claims 1-15.

#### **Fee for Filing a Brief in Support of Appeal**

Enclosed is a check in the amount of \$ 500.00 to cover the fee for filing a brief in support of an appeal as required under 37 C.F.R. §§ 1.17(c) and 41.37(a).

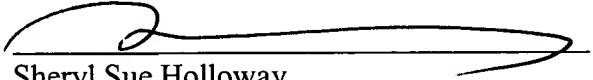
**Deposit Account Authorization**

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due. Furthermore, if an extension is required, then Appellant hereby requests such extension.

Respectfully submitted,

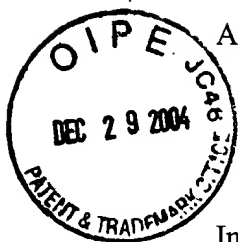
BLAKELY, SOKOLOFF, TAYLOR  
& ZAFMAN LLP

Dated: DEC. 27, 2004



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**APPENDIX A FOR  
APPEAL BRIEF UNDER 37 C.F.R. § 41.37**

1. (Previously amended) A method comprising:

receiving a block of transform domain coefficients and corresponding error flags,  
wherein at least one coefficient is erroneous due to transmission of the coefficients;  
estimating an initial value for each erroneous coefficient;  
decoding the erroneous coefficients of the block into estimated pixel values using  
the initial values of the coefficients to create predicted decodings of the block where there  
are errors in the coefficients and decoding non-erroneous coefficients of the block into  
error-free pixel values using received values of the coefficients to create partial decodings  
of the block where there are no errors in the coefficients;  
updating the value for each erroneous coefficient based on the partial and  
predicted decodings of the block; and  
updating the estimated pixel values of the block using the updated values of the  
coefficients.

2. (Original) The method of claim 1, wherein estimating an initial value further comprises estimating the expected value of each erroneous coefficient.

3. (Previously amended) The method of claim 1, wherein decoding erroneous and non-erroneous coefficients further comprises applying the transform domain coefficients to an inverse transform.

4. (Original) The method of claim 1, wherein updating the value for each erroneous coefficient further comprises minimizing a least squares equation.

5. (Previously amended) The method of claim 1 further comprising:  
displaying the pixel values.

6. (Previously amended) An apparatus comprising:

means for receiving a block of transform domain coefficients and corresponding error flags, wherein at least one coefficient is erroneous due to transmission of the coefficients;

means for estimating an initial value for each erroneous coefficient;

means for decoding the erroneous coefficients of the block into estimated pixel values using the initial values of the coefficients to create predicted decodings of the block where there are errors in the coefficients and decoding non-erroneous coefficients of the block into error-free pixel values using received values of the coefficients to create partial decodings of the block where there are no errors in the coefficients;

means for updating the value for each erroneous coefficient based on the partial and predicted decodings of the block; and

means for updating the estimated pixel values of the block using the updated values of the coefficients.

7. (Original) The apparatus of claim 6, wherein said means for estimating an initial value further comprises means for estimating the expected value of each erroneous coefficient.



8. (Previously amended) The apparatus of claim 6, wherein said means for decoding the erroneous coefficients and the non-erroneous coefficients further comprises means for applying the transform domain coefficients to an inverse transform.

9. (Previously presented) The apparatus of claim 6, wherein said means for updating the value of each erroneous coefficient further comprises means for minimizing a least squares equation.

10. (Previously amended) The apparatus of claim 6 further comprising:  
means for displaying the pixel values.

11. (Previously amended) A computer readable medium having instructions which, when executed by a processing system, cause the system to:

receive a block of transform domain coefficients and corresponding error flags,  
wherein at least one coefficient is erroneous due to transmission of the coefficients;

estimate an initial value for each erroneous coefficient;

decode the erroneous coefficients of the block using the initial values of the coefficients to create predicted decodings of the block where there are errors in the coefficients and decoding non-erroneous coefficients of the block into error-free pixel values using received values of the coefficients to create partial decodings of the block where there are no errors in the coefficients;

update the value for each erroneous coefficient based on the partial and predicted decodings of the block; and

update the estimated pixel values of the block using the updated values of the coefficients.

12. (Original) The medium of claim 11, wherein the executed instructions further cause the system to:

estimate the initial value by estimating the expected value of each erroneous coefficient.

13. (Previously amended) The medium of claim 11, wherein the executed instructions further cause the system to:

decode the erroneous and non-erroneous coefficients by applying the transform domain coefficients to an inverse transform.

14. (Previously amended) The medium of claim 11, wherein the executed instructions further cause the system to:

update the estimated value for each erroneous coefficient by minimizing a least squares equation.

15. (Previously amended) The medium of claim 11 wherein the executed instructions further cause the system to:

display the pixel values.